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ABSTRACT

Microeconomic theory encompasses two basic theoretical concepts. First is the theory of general competitive equilibrium in a market economy, which holds that the actions of any one agent cannot affect prices or quantities for the system as a whole. The second is that when the conditions of competitive equilibrium do not apply, theories of games come into play. Games may involve cooperation, in which case payoffs to the agents involved are equal, or competition, in which case payoffs are unequal. Communication makes solutions easier in problems of cooperation, but provides no guarantee of success in problems of competition. Despite the self-serving tendencies of individuals in groups and the frequency with which competitive situations arise within groups, the ability of groups to exist and function provides evidence that social norms and conventions affect the behavior of group members. These social norms must, therefore, be considered in addition to the game theory aspects of microeconomic theory when an adequate model of group behavior is being sought. The socializing impact of such institutions as education must be explored, understood, and integrated into microeconomic theory before economic behavior can be explained adequately. (Author/PGD)

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MICROECONOMICS, SOCIALIZATION, AND NORMS

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MICROECONOMICS, SOCIALIZATION AND NORMS

Abstract

To the extent that the economics of education has moved beyond simply the study of the finance and budgetary process, it has tended to involve an attempt to rationalize, explain, and predict educational outcomes or changes in educational outcomes using choice theoretic or microeconomic models. After an initial round of theoretical and empirical work, in which the consequences of the idea that one could invest in human as well as physical capital were worked out, and rates of return estimated, practitioners of the economics of education now find themselves painted into something of a corner. Their training enables them to elaborate and continue to "confirm" a theoretical model which increasingly demands little further refinement. At the same time, this microeconomic focus renders them increasingly unable effectively to deal with a wide range of educational policy considerations with important economic implications.

Microeconomic theory consists of a theory of non-strategic interaction (the competitive model) and theories of strategic interaction (game theory). The debate addressed in this paper is whether, in both cases, exogenously specified social structural constraints (rules or norms) are as essential as technologies, preferences, or resource endowments in defining the arena within which individuals pursue their goals. The paper concludes that microeconomic theory in general and game theory in particular do not and probably cannot eliminate the need in behavioral models to make appeal to social norms as an independent explanatory category, a category not in turn explicable through a model which focusses solely on the individual aims and actions of members of the group whose behavior these norms influence. Although the argument of the paper is general, and applicable to work in areas beyond the economics of education, the particular focus, expecially in section 5, is on the process and economic significance of socialization, conducted largely in schools, whereby norms are transmitted from one generation to the next.

Microeconomics, Socialization, and Norms

1. Introduction

Methodological individualism remains an important force within the economics profession today. The idea that the behavior of a group can, in principle, be explained solely by reference to the motivations (aims or preferences) and the resulting choices and actions of the individuals who comprise it continues to exercise a powerful hold on the imagination of many in this discipline. In some cases (von Mises, for example,[1] or some of the more extreme writings of Milton Friedman), this individualism is explicit, and is proclaimed polemically: the very concepts of society or social structure are frequently denounced as meaningless by these writers. In other cases where, for one reason or another, an economist finds himself uncomfortable with this extreme position, methodological individualism remains in the background, a premise, unexamined, not subject to critical scrutiny which nevertheless has important effects on the conduct of theoretical and empirical research.

In addition (and related) to its effect on research strategy, methodological individualism tends, in matters of public policy, to predispose members of the profession towards certain positions and away from others. Indeed, what some would view as the non-optimistic, cynical view of human nature associated with this emphasis on individual egoism becomes, more often than not, the defining feature of the economist qua economist. Attitudes among economists towards those who do not share this view range from bemused curiosity, to skepticism, to outright disdain. Hardly surpisingly, these attitudes are reciprocated by many outside the profession, who with some reason view the persistence of

methodological individualism as largely responsible for the simplistic view of human nature they attribute to economists.

Needless to say, no one would suggest that we measure the analytical efficacy of economists by how much they are loved and cherished by other social scientists. But insofar as this methodological predisposition drastically limits the ability of economists to deal effectively with an important range of phenomena with significant economic consequences, it does warrant careful scrutiny.

Microeconomic theory consists of a theory of non-strategic interaction (the competitive model) and theories of strategic interaction (game theory). The debate addressed in this paper is whether, in both cases, exogenously specified social structural constraints (rules or norms) are as essential as technologies, preferences or resource endowments in defining the arena within which individuals pursue their goals. Some have simply denied this outright.[2] Others, associated with a development in economics (and, indeed anthropology) that one might call neoclassical institutional economics, have proposed a research strategy that attempts indirectly to preserve the basic principles of methodological individualism. This strategy recognizes the importance of institutional or rule structures at an intermediate level of analysis, but then tries to explain them as having resulted from some logically prior process of maximization conducted through a political process. After carefully considering the theory of games of cooperation and conflict, this paper reaches the conclusion that whereas this program may have some value in directing research on the choice of or evolution of institutional or legal structures designed to deal with problems of coordination, the strategy breaks

down completely when applied to rule structures designed to deal with problems of conflict as well as cooperation: Prisoner's dilemma situations are archetypal. A final section reiterates the basic thesis of the paper: Microeconomic theory in general and game theory in particular do not and probably cannot eliminate the need in behavioral models to make appeal to social norms as an independent explanatory category, a category not in turn explicable through a model which focusses solely on the individual aims and actions of members of the group whose behavior these norms influence.

This position is directly contrary to that set forth by John Harsanyi in a 1968 article entitled "Individualistic and Functionalistic Explanations in the Light of Game Theory."[3] In that article Harsanyi took issue with a prominent sociologist, Talcott Parsons, who had recognized the failure of microeconomic theory adequately to deal with the problem of order and suggested that one needed to adduce social norms to account in many cases for solidarity or cooperation. Harsanyi criticized Parsons on the grounds that he left unexplained the origin of these norms, and went on to argue that "social norms should not be used as basic explanatory variables in analyzing social behavior, but rather should be themselves explained in terms of people's individual objectives and interests."[4] Harsanyi advanced this proposition along with an attack on functionalist explanations in social science, an attack that contained many telling points.[5] However, a rejection of a functionalist approach as defined by Harsanyi does not in any way entail acceptance of the proposition that norms can be made fully endogenous using rational choice models, something that Harsanyi nevertheless seems to imply is the case. Moreover, it is hard to see the force of his criticism of a behavioral model simply because the origin

of one category of variables -- social norms -- is not in turn explained using a general model. This should not, in principle, be any more upsetting to an economic theorist than the nonexplained origin of the individual preferences hypothesized everyday, preferences whose exogeneity has usually been considered sacrosanct.[6] Indeed, the case that preferences are socially determined has at least as much going for it as the case made by methodological individualists that social norms result from the aggregation of individuals choices determined by aims and motivations derived from preferences, which is to say that neither case is totally convincing.

This paper maintains that the most important contribution of game theory to economics, as to psychology, lies not in the problems it solves, but in those it does not. These latter problems illustrate in a particularly striking fashion the necessity (if we desire a model with explanatory or predictive capabilities) for adducing such historically determined concepts as norms, solidarity, or social structure, even in models where one begins, as a tough-minded, no-illusions-about-human-nature economist does, by assuming that people are basically greedy, self-centered, and above all, looking out for numero uno. If the methodological individualist position is wrong, and Parsons, among many others was right on this particular issue, one conclusion is that economists ought to devote more attention to the economically relevant process whereby norms and social structure are reproduced from generation to generation.[7] Having had little to say in the past about this process of socialization as it takes place, for example, in family and school, economists have, in general, ignored it.

2. Language, Socialization, and Norms

Language is perhaps the most obvious example of a set of rules organizing interaction (in this case, communication between individuals) which cannot easily be derived using the explanatory techniques associated with methodological individualism. The rules of language are transmitted culturally from generation to generation as part of the process of socialization: we do not rely on market mechanisms to ensure that each new generation in a particular region ends up speaking a similar language. The problem of establishing a common language given that we had none would have many of the elements of a game of coordination: we might well be indifferent to what language we spoke, provided it was understood by those with whom we interacted, but without some historically determined process of socialization, it would be difficult and expensive to reach agreement on a common set of linguistic rules.

Once established, linguistic traditions demonstrate remarkable powers of persistence. The explanation for why people in certain wards of Manchester, New Hampshire or towns in Cape Breton, Nova Scotia speak French at home rather then English reflects accidents of history and culture, rather than a rational response to different resource endowments or technological problems than those faced by their English speaking neighbors. Although some languages are slightly more flexible in dealing with certain types of communication than others, in general any number of languages can satisfactorily provide a medium of communication, provided all members of the relevant group know them.

The question of the origin of language, of course, remains. In an amusing but important foreward to David Lewis's book on Convention, W. V. Quine recollects how he originally conceived of it:

> When I was a child I pictured our language as settled and passed down by a board of syndics, seated in grave convention along a table in the style of Rembrandt. The picture remained for a while undisturbed by the question what language the syndics might have used in their deliberations, or by dread of vicious regress.[8]

Quine alludes here to his eventual rejection of the proposition that the rules of language could be understood as if they originated in conventions: Quine seems to be arguing that even if we call these linguistic regularities conventions, they clearly could not have originated in conventions. He suggests that the rules of language, like the rules of custom or law must, for most purposes in social science, be treated as exogenously or historically determined givens, not themselves subject to explanation using general models.

The learning of language is only one means whereby we become social individuals. The process of socialization involves the transmission of norms from generation to generation, norms which permit the satisfactory resolution of situations structured so that the interplay of purely self-interested agents might otherwise produce a situation viewed ex post as unsatisfactory by many and in some cases all of the relevant agents. Yet, it was Adam Smith who reminded us that we rely not on the benevolence of the baker for our bread, but on his self-interest.[9] Does not the very concept of norms represent an obfuscation of social reality, wishful thinking on the part of fuzzyminded idealists who lack the hard-headed realism of a professional economist?

Economists indeed have had a great deal of difficulty with the very concept of norms: rules or expectations affecting human behavior which are not apparently reducible to the decisions of the agents whose behavior they organize. Many economists such as Harsanyi, or Tullock, are openly skeptical

that norms need represent an independent component of explanations or models of human behavior. This paper is directed in part at these skeptics. A corrolary of accepting norms as an independent explanatory category will be, of course, the recognition that behavioral models based on the interaction of self-interested agents constrained only by resources, preferences, and technologies cannot be made complete without an exogenous specification of norms or norm-like concepts.

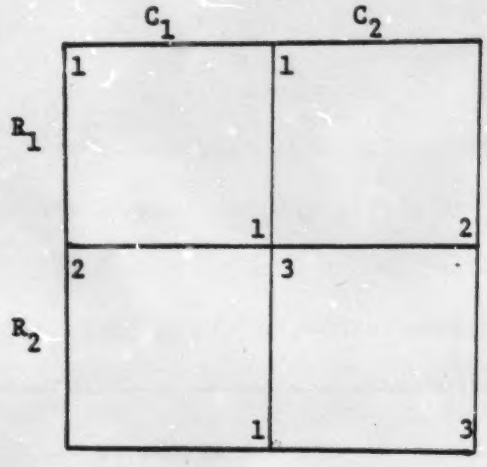
3. Microeconomics and Norms

Microeconomic theory can be subdivided into a theory of non-strategic interaction, which is the theory of general competitive equilibrium in a market economy, first developed in its modern form by Walras, and the theory of strategic interaction or game theory, developed initially by von Neumann and Morgenstern. A competitive market economy in equilibrium offers no opportunities for strategic interaction: no one agent, by varying the quantity of any input or output demanded or supplied, can affect prices or quantities for the system as a whole, although jointly, these prices and quantities are maintained in a steady state through the actions of all. The theory of strategic interaction, by contrast, appropriate, for example, for an oligopolistic non-competitive economy, examines behavior and outcomes in situations where one agent's actions may directly depend on and in turn influence the actions of other agents.

If we imagine a competitive equilibrium to be disturbed, let us say, by a change in resources or technologies, we must consider the movement of the economy from disequilibrium back to equilibrium unless we assume away the

problem by positing instantaneous adjustment. Given the disturbance, there may now be limited opportunities for strategic interaction, and we may consider whether game theory has anything to tell us about them. The free market economist implicitly believes that all games resulting from a disturbed equilibrium have the following rather uninteresting structure:

Figure 1



We posit an economy consisting of only two regions, for purposes of simplification. In the first instance, represented by the upper left hand corner, each agent has no real option: each performs action 1, corresponding to self-sufficiency, and receives a payoff of one unit (Row chooser's payoff is in the upper left of each box; column chooser's in the lower right). Now we imagine a new transport technology becoming available, for example, which not only dramatically lowers the cost of transportation between the two regions, but also brings each into contact with world markets. For both row chooser and column chooser, argues the economist of the free market, strategy two (specialization) is now dominant, in the sense that each will be better off with it regardless of what the other does: the result is that the economy moves almost

effortlessly to the new equilibrium, a stable equilibrium in which no one wishes they had done anything differently, either individually or jointly. The new equilibrium (with payoff matrix 3,3) persists through time unless disturbed, and the possibilities for strategic interaction become, again, irrelavant, because there is no incentive for either agent to initiate such action.[10]

Unfortunately, as game theory succeeds in demonstrating so brilliantly, situations of strategic interaction do not always have the simple structure of Figure 1. We have already encountered a problem of coordination in our discussion of language. The problem of selecting a set of rules of communication is formally analogous to a problem popularized by Thomas Schelling.[11] Schelling's problem is the following: Suppose we wish to meet in New York: we don't care where we meet but we care greatly that we do. If we assume that there are only three possible meeting places in New York, then we each must choose one of these as our destination. The situation has a payoff matrix corresponding to Figure 2.

Figure 2

	C_1	C_2	C_3
R_1	1, 1	0, 0	0, 0
R_2	0, 0	1, 1	0, 0
R_3	0, 0	0, 0	1, 1

Let us call any combination of a row choice and a column choice a rule organizing the behavior of these two individuals. In this case there are nine possible rules, three of which (the on-diagonal elements of the matrix) are clearly Pareto superior to any of the other six (the off diagonal elements) in the sense that these rules are associated with payoffs which make both parties better off than they would be under an off diagonal rule. Once established, any one of these three "efficient" rules presents no incentive to either party to try and create a new rule. There is unfortunately, no guarantee that the parties will easily arrive at a rule corresponding to a diagonal element. This is a pure problem of coordination in a game which involves no conflict. The problem is "solved" (by Schelling) by appeal to a process of socialization undergone by both individuals which suggests to each of them that the most obvious place to meet (perhaps) is the Information booth at Grand Central Station.[12]

The first reaction of many economists when confronted with a problem of this sort, which can only be solved by appeal to such an ad hoc historically determined process of socialization, is to argue that the frequency of problems of this type thrown up by an advancing economy is probably low compared with those which can be solved automatically through the responses of self-interested agents to the new payoff matrix they face, as in Figure 1. To this argument one can respond first of all that situations of the Figure 2 variety are far more likely to create problems of public policy, upon which the economist will be called to voice his opinion; the Figure 1 situations will present problems only to individuals, who will solve them quietly without

the issue requiring public attention. Therefore, even if these problems are a small fraction of the total number of problems solved by an economic system, they are a large fraction of the problems which an economist as a social scientist will be called upon to address. Secondly, one has only to mention such questions as what guage our railroads should have, what side of the road we should drive on, what languages, including computer languages, we should use, where the keys on the typewriter should be located, what system for broadcasting and receiving color television signals we should employ, what our standards of weights and measures should be (metric or otherwise), how large we should make the computer card,[13] what international standard there should be for audio cassettes, and so forth to recognize that there does exist an absolutely large class of coordination problems with serious economic consequences if they are not or had not been effectively solved.

The second response of those economists who stigmatize "ad hoc", "historical" or "social structural" explanations is to admit that at an intermediate level of analysis rules (or institutions) are important, but that ultimately they can be explained without resort to "ad hoc" explanations. The argument is that those rule structures that now prevail do so because they are efficient. We have already seen how the rules associated with the three on-diagonal elements in Figure 2 are efficient in comparison with those associated with the off-diagonal elements. But let us now return to the Schelling problem and suppose that the two individuals were not indifferent as to which of the three places they met at: Grand Central Station was in fact preferred to Lincoln Center or the Empire State Building because the two travellers intended to continue together by train to Boston. However, because they have met elsewhere in the past, each cannot be sure the other will go to the train station: they are still faced with a dilemma. We can characterize this

new situation using the payoff matrix in Figure 3.

Figure 3

	C_1	C_2	C_3
R_1	1, 1	0, 0	0, 0
R_2	0, 0	3, 3	0, 0
R_3	0, 0	0, 0	1, 1

This is still a pure game of cooperation — where by cooperation we mean not, as does Harsanyi, that communication between the agents is possible, but rather that in any given cell, payoffs to the two agents are equal. Nevertheless, as compared with Figure 2, the R_2C_2 choice is now clearly the optimal rule. Imagine that we observe that a rule yielding the R_2C_2 choice prevails. (Note that we could as well be talking about railway gauges, or computer languages as meeting places.) Then, according to a neoclassical institutional economist,[14] who wants to make rule selection and changes endogenous, the explanation for why we observe this rule would be that it had been selected <u>as if</u> a social maximizer had considered all nine possible rules and had chosen the one that was Pareto superior. Recognizing that it is costly to change established patterns, especially if they are embodied in human and physical capital (i.e. the cases of metric conversion, railway gauges, etc.), it does

not seem totally unreasonable to hypothesize that in the long run the political process would act to solve problems of this sort by creating channels of communication and permitting coordination. Indeed, we might define the presence or absence of a political process according to whether or not communication is permitted among the agents. Another way of saying that the political process is likely, in the long run, to solve pure problems of coordination is that the R_2C_2 rule is the one that the agents would quickly arrive at if they were able to communicate.

Compare, for example, the matrix created by deleting the third row and column from Figure 3 (call this 3*) with Figure 1. The big difference in the 3* case is that in the absence of communication there is no automatic mechanism to get one from R_1C_1 to R_2C_2. Both parties would obviously prefer to be at the second point, but may hesitate before abandoning the traditional solution for fear that they will end up in one of the off diagonal (0,0) situations. But when the benefits of a new standard, meeting place or railway gauge exceed those of the current outcome by a margin larger than the costs of conversion, then it does not seem totally unreasonable to search for (or indeed create, if one is in a policymaking position) a political process establishing communication, and coordination of the move so as to avoid the losses associated with an R_2C_1 or R_1C_2 situation.

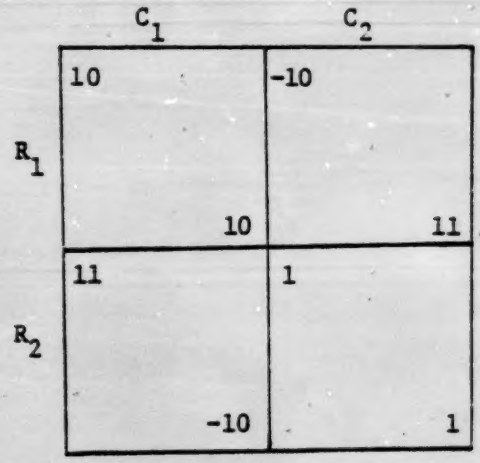
Unfortunately, neoclassical institutional economists have generalized an idea that might be applicable to the explanation of changes in rules designed to deal with pure coordination problems (where there are really no conflicts between the agents) to <u>all</u> rule and institutional structures, and the generalization is not justifiable. If political processes arose and

operated solely to deal with problems of coordination, then the research program suggested by a neoclassical approach to institutional economics might be a reasonable one. But coordination problems correspond to games of pure cooperation, and only a subset of social rules are designed to solve problems of coordination. As soon as elements of potential conflict intrude into the structure of the problem, as soon as socially desirable outcomes are not stable (i.e. there are strong incentives to rule violation), then the explanatory program runs into obstacles that are probably insurmountable.

4. Prisoner's Dilemma Rules vs. Coordination Rules

The so-called Prisoner's dilemma has received so much attention that it has almost become a cliché. The standard example involves two prisoners (perhaps freedom fighters in a just war) who are faced with the following choices by their captors: if they both confess, they each get five years in jail; if they both refuse to confess, they each get a year, but if one turns state's evidence and the other doesn't, the squealer gets off free and the other is shot. This creates a payoff matrix which might be represented by Figure 4.

Figure 4



What is immediately apparent is that the outcome that is best for both individuals considered together (the upper left) is not the best outcome for each prisoner considered alone. Moreover, as each prisoner considers the options, he realizes that regardless of what the other decides to do, he will be better off individually choosing the squealer strategy. Unless imbued with very strong norms of solidarity, then, the two prisoners end up in the R_2C_2 situation in spite of the fact that ex post, each prisoner would have been better off individually in two of the remaining three outcomes. The problem here is that the presence or absence of communication (a political process) makes absolutely no difference in the structure of the problem: the overwhelming temptation to cheat on an agreement makes the game with communication degenerate into exactly the same game that exists without it.

The same basic payoff matrix characterizes a great many situations in which a group (or two people) are jointly better off under a rule organizing their behavior that nevertheless leaves great temptations for rule violations. On some campuses in the United States a bicycle can be left unguarded and unlocked and still be retrieved: on others this is an invitation to a visit with one's insurance agent. If members of a group agree not to steal each others bicycles, they all save the real resources that would otherwise be used to purchase locks and chains. But there is a clear incentive (especially if no police force is provided) for each and every individual publicly to support the agreement, and privately to appropriate bikes when they need them. If more than a few yield to this temptation, the agreement breaks down, and the upper left-hand solution (no chains, no thefts) degenerates into the lower right-hand solution (chains, no thefts).

Much of our legal system has evolved in order to deal with problems of this sort, and although enforcement expenditures generally accompany rules where there are incentives to violation, the maintenance of the non-stealing outcome relies to a great extent on the willingness of a sufficiently large fraction of the population to forego the temptations of immediate gain. An individual may be willing to do this if he has confidence a sufficiently large fraction of the rest of the population will act in the same fashion. Another example: the Internal Revenue Service relies on intimidation and fines to ensure that taxes will be paid, but as their literature points out again and again, the fundamental basis of the system is voluntary compliance.

In discussing Figure 3, it was suggested that in the long run there was a presumption that the political process would find a way to get one to the Pareto superior rule (R_2C_2). In Figure 4, unfortunately, there is no such presumption. First of all, the socially desirable solution (socially desirable in the bicycle case, if not the Prisoner case) is not Pareto superior. As compared with either of the off diagonal elements it makes one person much better off at the expense of someone else who is made a little worse off. There is absolutely no theoretical presumption that the political process will succeed in establishing and maintaining an R_1C_1 rule: the social stability resulting from widespread acceptance of norms against theft or physically harming others is always precarious, always subject to disturbance, always subject to the risk that a large number of people in the relevant population will decide to go for short run gains. Clearly, when all do so, and the stability breaks down, they are all worse off. However, as Yossarian points out in Catch 22 when an associate begrudges him his unwillingness to fly combat missions

by asking what would happen if everyone felt that way, he'd "certainly (in that case) be a damn fool to feel any other way."[15]

The logical and moral problems created by situations of this type would be more amusing were they not so serious. For example, it is commonly argued that one ought to pay one's taxes because if everyone didn't we'd all be worse off. But this type of argument by generalization (one should not do a, because if all did a, it would be disastrous) is not always valid, as can be seen by substituting "not be an economist" for "pay your taxes." The argument that one should not be an economist because if everyone were an economist we would have nothing to eat is not a valid argument against joining the profession (although there may be others). Furthermore, the argument in favor of paying taxes is subject to devastating rebuttals, especially if they are used in tandem. First, one can argue that since everyone is going to pay, no one will be the wiser if I cheat. If this argument doesn't work, one can come back with "Since no one would be fool enough to pay their taxes, disaster will arrive anyway, and you don't expect me to be a sucker, do you?"[16] Philosophers have wrestled with varying degrees of success with these normative problems, although they have not ultimately been resolved. This lack of resolution, in a sense, mirrors the positive indeterminacy of Prisoner's dilemma outcomes.

Empirically, some level of enforcement expenditure (if only to convince those willing to abide by the rule if others do that they will not be suckers) is generally required to ensure tolerable levels of rule compliance. The problem for the research program set forth by neoclassical institutional economists is that the enforcement costs associated with maintaining a tolerable level of compliance will not be independent of the length of time a rule has

been in place, although the functional form relating enforcement costs to rule longevity is not obvious on a priori grounds. In the limit, enforcement costs may drop to 0, and the weight of tradition, through a process we understand imperfectly, may make it simply unthinkable for any agent to violate the current practice, in spite of individual incentives to do so.

To the extent that there are positive enforcement costs associated with ensuring that a rule associated with a potentially unstable outcome persists through time, and to the extent that one does not know these, the proposition that the political process can act as a social maximizer breaks down because the true payoffs associated with various rules under consideration are net of enforcement costs, and without known enforcement costs, one does not know the true payoff matrix. In coordination problems, enforcement is not an issue because there is no incentive to deviate from an efficient rule once established: Such rules are self-enforcing. This is no longer the case where there are elements of potential conflict in the structure of the problem.

Suppose, that as the result of institutional innovation, or a change in the resource or technological environment, a new option became available, an option which if it could be established as a rule with zero enforcement costs, would be Pareto superior (preferred by all parties) to current practice. Is there any presumption that the political process would operate so as to get one to this new position? Conservatives might with good reason suspect that the enforcement costs which would be necessary to maintain this new position would more than wipe out any apparent advantage. Radicals might

argue that one could rapidly establish a new presumption in favor of continuity, and move to the level where low or zero enforcement expenditures were necessary. There is no a priori means of deciding between the conservative and radical arguments, and there is therefore no presumption that the political process would necessarily operate so as to select the most "efficient" rule where elements of conflict exist potentially, because the true payoff associated with the rule depends on knowledge of the enforcement or overhead costs that would be associated with it, and these depend on longevity of rules, according to a functional form that cannot be determined using rational choice models.

To put it another way, a political process (or channels of communication) cannot be assumed to select "efficient rules" because the true payoff matrix is in these cases not known with certainty. Differences between conservatives and radicals, to the extent that they frame their arguments in terms of the good of the collectivity — generally a prerequisite for political discourse — need not simply reflect differences in risk preferences but may reflect substantial differences in the perception of an uncertain payoff matrix even in cases where there are no differences in risk preferences.

Game theorists sometimes become so enamored of the mechanics of the theory and the single-minded determination of their players to win that they lose sight of what any game theoretic problem presupposes: the arena in which the players are to compete or cooperate. To give a striking example, it is theoretically possible to develop a theory of the game of chess, a theory that would predict what actions a rational opponent interested in winning would undertake given the layout of the board and the next move one makes.[17] But one will not obtain, nor does one expect to obtain from such

a theory an explanation for why knights move in an L shaped pattern, or bishops move diagonally. Similarly, although one can investigate using game theory the dilemmas possibly faced by two prisoners, one does not and should not expect to obtain using this theory an explanation for why they are incarcerated. As we have seen, this arena is partly determined by resources and technologies, but the social norms that pervade the atmosphere are an equally important characteristic of that arena. A Prisoner's dilemma game where the players are imbued with a strong norm of solidarity looks quite different, and will have a different outcome, than one where this is lacking.

5. Education and Socialization

We mentioned earlier the relative neglect by economists of the process of socialization, and it may be helpful to reconsider here, in the light of the foregoing, the attitudes of economists as well as those of radical critics of the schools, towards the process of socialization. But this reconsideration is relevant to all of those who, in a policy-making or critical capacity, will shape the evolution of our schools.

Among Western economists, especially those in the United States, attitudes towards the process of socialization have evidenced a curious polarization depending on whether the object of inquiry was on the one hand Western educational systems, or on the other hand, those of socialist or Communist bloc countries. Aside from a few references to externalities, most of the pioneering work in the economics of education as applied to American schools virtually ignored their socializing function. On the few occasions where such scholars were called upon to comment on the school systems of socialist or communist countries however, they were ususally quick to point out that schools in these countries were explicitly instruments of the state, used to indoctrinate the youth of the country in its ideological principles.

By contrast, radical writers in the West, of whom Louis Althusser seems to have attracted the most attention on this issue, emphasize that Western schools socialize in a way which serves to reproduce structures of domination. His writings have been interpreted by some as implying a program of demystification in which ideological blinkers installed by such institutions as schools will be removed, and oppressed peoples will finally be able to discern their true individual and class interests. Althusser is generally silent on the character of the school systems of socialist and communist countries.

An independent observer of these intellectual developments might reach the conclusion that whereas Gary Becker and Louis Althusser are diametrically opposed on many issues, they seem to see eye to eye on at least one: socialization is a bad, since Becker would, I imagine tarnish socialist systems by stressing their emphasis on socialization, while Althusser wishes to do the same for school systems in Western countries. One is reminded of the hostility which sociologists faced in the 1950s doing work in this country on socialization: sociologist and socialization sounded so close to socialism, that those hostile to the latter rather indiscriminately opposed anything having to do with the former.

Althusser, it seems to me, is correct in stressing the socializating function of the educational system. He is also correct in identifying the educational system as an important but qualitatively different element of the control apparatus of society, qualitatively different, let us say, from the police force or the army. He is also correct in pointing out that the most favorably situated members of society benefit disproportionately from the maintenance of social stability, and in that sense, control is in their interest.

But he does not place sufficient emphasis on the fact that all members of society may perceive an interest in an orderly set of social relationships, even though they benefit relatively less from such a situation than do others.

One of the reasons that radical agitators often find it so difficult to persuade "oppressed peoples" to "see their true interest," to "overthrow the bonds of domination that enslave them," is that in do doing they are asked to act in manners contrary to what their everyday experience, experience which involves interaction not only with their superiors, but also with their equals and inferiors, tells them is essential in order for any group to persist. Revolutionaries, in breaking the eggs Lenin said one needed for an omelette, must persuade normally rule-abiding individuals to use force and violence, perhaps even to lie, cheat and steal in support of the revolution. For some, of course, such activities come naturally, whether in a revolutionary or nonrevolutionary situation. For others, however, such behavior runs against deeply ingrained behavioral patterns, and will be struggled against with great energy. It seems to me that it is incorrect for radicals to characterize such attitudes (as they often do with a trace of smugness and condescension) as false consciousness or bourgeois morality. This is especially true insofar as revolutionarires who suddenly find themselves successfully in positions of power generally execute a 180 degree turn, and begin to rebuild, albeit in a slightly different fashion, the authority structures they worked for so many years to destroy.

Behavioral patterns encouraged in the struggle to bring down the old regime become intolerable to the extent that they threaten the survival of the new. The most basic imperative is often an external contraint: international recognition requires the exercise of effective control over one's territory: this in turn requires that the citizenry demonstrate a respect

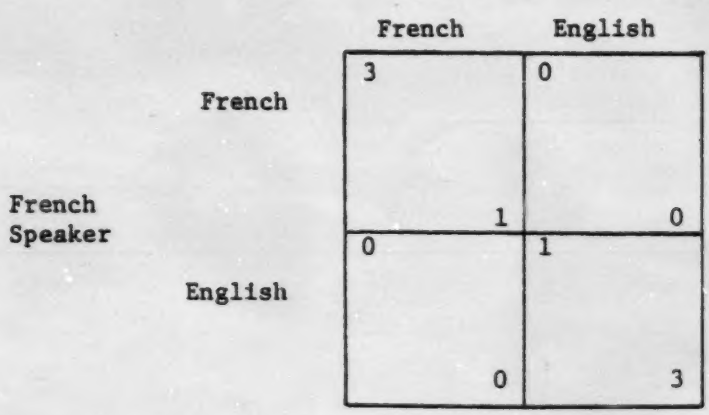
for and adherence to the directives of the state, attitudes which until very recently had been actively discouraged. The problem may manifest itself in different forms. In Nazi occupied Europe, resistance leaders encouraged citizens to struggle against the occupying powers by such acts of passive resistance as avoiding fare payment on public transit. When democratic governments were restored, it was often difficult to get people to break a habit which not only gave people a great deal of psychic pleasure, but also was individually convenient, in that it saved substantial sums of money. Similarly, if one encourages nonpayment of taxes in order to bring down a despotic regime, behavior which under the old regime one would praise as revolutionary and patriotic resistence becomes, once one is in power, antisocial and criminal.

The process of socialization, as it takes place for example, within educational institutions, can usefully be thought of as involving the inculcation of norms of different types. To some of these norms, corresponding to pure problems of coordination, it is difficult to imagine one having political objection. Suppose children are taught in schools that whether on the road or in a hallway, they are to pass on the right. Clearly, schools and roads function more efficiently when this convention (or one requiring passing on the left) is observed. It is difficult to imagine Althusser objecting to such instruction on the grounds that the inculcation of such norms involves class domination.

To be sure, many norms which on the surface appear to be solutions to simple coordination problems may involve other considerations. Language is one example. For historical reasons some minorities grow up learning a language which differs from that of the majority. Although <u>in principle</u>

language is a solution to a coordination model, in practice, people may not be indifferent with regard to a common medium of communication, since the costs and the flexibility with which one can express oneself will depend on whether the common language is one's native language. These costs, and the involuntary nature of being forced to incur them, may cause language to become symbolic of a larger set of issues: How else to interpret the French air traffic controllers' demands that French (and not English, the universal language of international aviation) be used in Quebec control towers? One might modify Figure 2 to take account of costs of accomodation where communication is desirable:

Figure 5



If each party tries to stick to their native language, they end up in R_1C_2, and don't understand each other. In order for communcation to take place, either the English speaker must learn French (R_1C_1) or the French speaker must learn English (R_2C_2). If we assume that English speakers and French speakers can accomodate themselves with equal ease, then the efficient solution (in the sense that it establishes a communication with the least social costs) is for the minority to accomodate itself to the majority. This is clearly cheaper than an alternate solution, such as the Swiss, where each citizen must

learn several languages. But once again, efficiency is not everything: since it is unreasonable to suppose that compensation will actually be paid, solutions to apparently simple coordination problems may take forms which to the economist appear inefficient.

In addition to norms designed to deal with coordination problems, students also learn norms against stealing and lying, norms designed to deal potentially with Prisoner's dilemma problems. Traditional education taught that these actions were wrong, and did not try to justify this assignment by inquiry into their consequences. We have already touched on the legitimacy of viewing the inculcation of such norms as involving elements of domination. Political and social stability requires the acceptance of norms which continually impel the individual to suppress egoistic desires for short term gain. Political stability definitionally benefits those who hold disproportionate quantities of real property. Does this necessarily involve domination? The answer, it seems to me, is obviously no. It may, however: norms which advocate obedience to laws which prohibit ownership of property by blacks or Jews are clearly means by which a majority dominates a minority. A law restricting suffrage to those over six feet tall would likewise be a means whereby the tall exercised domination over the short. The important principle to keep in mind, nevertheless, is that debates regarding the justice and fairness of norms should not be replaced by debates about their desirability or necessity in the first place.

This position that socialization was a bad was implicitly shared by many of the 1960s radical critics of the schools, critics who tended to oppose authority in all its manifestations. In the process, a legitimate debate about the forms of authority got transformed into a debate about

the desirability of authority per se. The reaction to forms of authority that may well have been oppressive and needlessly harsh became transformed into the anarchistic tenet that all authority was bad. The failure on the part of both critics and defenders of the American public school system to recognize the inevitability of socialization (in a stable and viable society) has made the current generation of school analysts singularly unprepared to deal with debates about its form and content.

Schools are today, as they were in the 1840s, in the center of controversies regarding what reasonably can be expected from them. With the recognition of such social problems as increases in unlawful activity in and outside of schools, or rises in illegitimacy, come calls for schools to do more, and reactions from schoolteachers that they are already burdened with too much. If schoolmasters in the 1840s were unconcerned with marijuana and harder drugs, demon rum was on their mind, and they shared with the 1970s concern with crime and at least the consequences of "immorality." Strong pressures from certain circles demanded religious instruction in the public schools to deal with such problems. These pressures were successfully resisted and the principle of nonsectarian education prevailed. But as recent controversies involving school prayer, or the content of certain textbooks reveal, these debates are not totally dead.

Those working in the area of educational policy formation, including such areas as finance and governance, must develop an appreciation for these problems and concerns, and the extent to which they may impinge on their own policy objectives. It will not do to avoid the issue by claiming that the purpose of schools is to "educate," and go about one's business as if the character of socialization was not an issue. By refusing to tackle the issue head

on, and being unprepared for the legitimate debates about the form and content of socialization in a democratic society (debates for which a reformer like Horace Mann or John Dewey was well prepared), one permits the issue to be taken over by those who feel either that socialization is a bad, or by those who have particularly strongly held views on its appropriate content, and wish to impose these on the rest of society. Nor will it suffice automatically to dismiss such concerns as "surface phenomena" which, like ripples on a pond will, if left undisturbed, eventually disappear, even though this may be true for some of them. Every society must socialize, and in a modern nation a good deal of that socialization will take place within schools. Those concerned with the future evolution of our educational system must be prepared to confront the difficult problems and debates associated with this reality.

6. Conclusions

The question whether such concepts as norms can in principle be completely dispensed with (by reducing them to some logically prior round of individual interaction in which appeal to norms or norm-like concepts is not made) is an important one, too important indeed for economists to remain agnostic on. True believers in the religion of microeconomic analysis answer this question unhesitatingly in the affirmative. Many others remain somewhat skeptical, although basically sympathetic: The thought that with further development the techniques of game theoretical analysis will lead us in this direction is a comforting one.

But, as is argued above, the true message of game theory lies not in a demonstration of the unconstrained power of microeconomic analysis, but rather in a stark illumination of its central limitations. By schematizing through such structured situations of strategic interaction as the prisoner's dilemma or the coordination dilemma, problems which can only be "solved" by

appeal to norms or norm-like concepts, by analyzing situations in which individuals pursuing their own welfare will not necessarily lead to an outcome which ex post, one or the other or both would have preferred, game theory dramatically illustrates the boundaries within which a theory emphasizing the interaction of self-interested agents operates.

If one refuses to answer this question in the affirmative, that is, if one maintains that norms or rules logically antedate markets (and indeed situations of strategic interaction), then one must pay close attention to the historical, legal, or cultural evolution of the situation one is studying. By recognizing that norms need to be analyzed in their own right using extra-economic and often case-specific methods, we can redefine microeconomic analysis as the analysis of the results of the behavior of self-interested agents acting within constraints determined in part by technologies and resources, but also in part by the systems of norms they confront. Such analysis can be differentiated according to whether the interaction is strategic, in which case the techniques of game theory apply, or nonstrategic, in which case techniques appropriate for the analysis of a competitive market economy are called for. In both cases, however, individual choices are constrained not only by resources, preferences, and technological constraints, but also by extraindividual social restraints. Any outcomes predicted or explained by such behavioral models are as conditional on the specified "social restraints" (norms) as they are on the other more commonly specified categories of exogenous variables.

An unexpected conclusion of this paper is that the fallback position of neoclassical institutional economics (that at an intermediate level of

analysis the constraining influence of norms or rules must be recognized, but that ultimately they can be made endogenous, by appealing to political processes that act in the long run to ensure that "efficient rules" prevail) may have some merit. But it has merit only insofar as the rules addressed deal with problems of coordination. As soon as the rules considered deal with situations which involve elements of conflict, as, for example, the bicycle or Prisoner's dilemma cases, the position is no longer valid. Since coordination problems are only a subset of those that laws, rules, or norms sometimes solve, this represents a very serious obstacle to the research program associated with this position. As Anatol Rapoport points out in his book Fights, Games, and Debates, "Game theory leads to some genuine impasses, that is to situations where its axiomatic base is shown to be insufficient for dealing even theoretically with certain types of conflict situations."[18] And Rapoport and Chammah introduce their seminal work on the Prisoner's dilemma by observing that "the potentially rich contributions of game theory to psychology will derive from the failures of game theory rather than its successes."[19] Substituting 'economics' for 'psychology' we obtain a statement close to the argument of this paper. The most interesting contributions of game theory to the analysis of economic problems lie not in the problems it solves, but in those it does not.

The rather intimidating inscription "True Freedom is Obedience to Law" is emblazoned over the Federal courthouse in Worcester, Massachusetts. This statement, a paradoxical one to many microeconomic theorists but a commonplace for a legal theorist, is another way of stating that norms established through the process of socialization provide part of the framework within which individuals pursue their self-interest. Intellectually defensible microeconomic

analysis, in its competitive or game theoretic variant, can only be undertaken if this principle is recognized; the refusal to recognize it leaves one with no satisfactory explanation for why the world does not generate into a war of all against all. As a positive statement about the operation of the real world and the tasks of social science, this proposition is straightforward enough. Having said this it remains true that there are many solutions to problems of order, and this paper has only touched upon the normative problems associated with evaluating, according to a standard yet to be agreed upon, various possible rules and acts.[20]

Footnotes

[1]See Ludwig von Mises, Human Action (New Haven: Yale University Press, 1949), pp. 42-43, or 143-144, for example.

[2]See the writings of Gordon Tullock, for example. The Social Dilemma: The Economics of War and Revolution (Blacksburg: University Publications, 1974), in which he argues that revolutionaries are motivated solely by their desire for a good job in the new regime, is as good an example as any.

[3]John Harsanyi, "Individualistic and Functionalistic Explanations in the Light of Game Theory: The Example of Social Status," in I. Lakatos and A. Musgrave eds., Problems in the Philosophy of Science (Amsterdam: North Holland, 1968), pp. 305-322.

[4]Ibid., p. 321.

[5]Ibid., pp. 306-307. Harsanyi points out quite rightly that functionalism, as it is often applied, rules out by assumption a non-correspondence between institutions and the functional needs of society, and as a result tells us little about the processes of social change and conflict.

[6]An exception is found in the work of Herbert Gintis. See his "Welfare Criteria with Endogenous Preferences: The Economics of Education," International Economic Review 15 (June 1974): 415-430.

[7]I have tried to do this in several articles. See Alexander J. Field, "Educational Expansion in Mid-Nineteenth Century Massachusetts: Human Capital Formation or Structural Reinforcement?" Harvard Educational Review 46 (November 1976), especially pp. 534-535; Alexander J. Field, "Economic and Demographic Determinists of Educational Commitment, Massachusetts, 1855," Journal of Economic History 39 (June 1979), especially pp. 442-443, and Alexander J. Field, "Occupational Structure, Dissent, and Educational Commitment, Lancashire, 1841," Research in Economic History 4 (1979), ed. Paul Uselding, especially pp. 262-269.

[8]W. V. Quine, foreward to David Lewis, Convention: A Philosophical Study (Cambridge: Harvard University Press, 1969), p. xi.

[9]"It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner but from their regard to their own interest." Adam Smith, The Wealth of Nations (New York: Modern Library, 1937), p. 14.

[10]See Edna Ullmann-Margalit, The Emergence of Norms (Oxford: The Clarendon Press, 1977), pp. 103-104.

[11]Thomas Schelling, The Strategy of Conflict London: (Oxford University Press, 1960), p. 56.

[12]Schelling does not actually use the word socialization, although he grants that the solution "may depend on imagination more than on logic," and includes "precedent" and "who the parties are and what they know about each other" in his list of potential contributions to a solution. Schelling, Strategy, p. 57.

[13]Herman Hollerith, one of the founders of the Computing Tabulating Recording Company, which later became IBM, developed in 1886 the punched cards first used in tabulating the 1890 U.S. Census. An associate apparently asked him how large the cards should be and in response he pulled out a one dollar bill. That size remains with us to this day.

[14]For a more detailed discussion of this label, and work conducted within this tradition by North and Thomas and by Posner, see Alexander J. Field, "What's Wrong with Neoclassical Institutional Economics," unpublished paper, Stanford University, September 1979.

[15]Joseph Heller, Catch 22 (New York: Dell, 1955), p. 107.

[16]See David Lyons, Forms and Limits of Utilitarianism (Oxford: Oxford University Press, 1965), pp. 1-7; Ullmann Margalit, Emergence, pp. 56-57.

[17]Anatol Rapoport and Albert M. Chammah, Prisoner's Dilemma: A Study in Conflict and Cooperation (Ann Arbor: The University of Michigan Press, 1965), p. 16.

[18]Anatol Rapoport, Fights, Games, and Debates (Ann Arbor: University of Michigan Press, 1960), p. 242.

[19]Rapoport and Chammah, Prisoner's Dilemma, p. 11.

[20]Lyons, Forms and Limits is a good introduction. Implicitly, the ethics of a neoclassical institutional economist are the ethics of a rule utilitarian, who believes that "acts are to be regarded as right only if they conform to rules that can be supported on utilitarian grounds." (p. vii) The ethics of an economist such as Tullock, by contrast, are those of an act utilitarian. Charles Fried has recently argued for a return to what he calls a nonconsequentialist approach to ethics. He wishes to evaluate actions as categorically right or wrong, and not judge them as good or bad according to their consequences, as a utilitarian would. "To propound a categorical norm, to argue that an action is wrong, is to invite inquiry into the kinds of actions intended to be covered, but not an inquiry into the costs of compliance." Charles Fried, Right and Wrong, (Cambridge: Harvard University Press, 1978), p. 12.

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